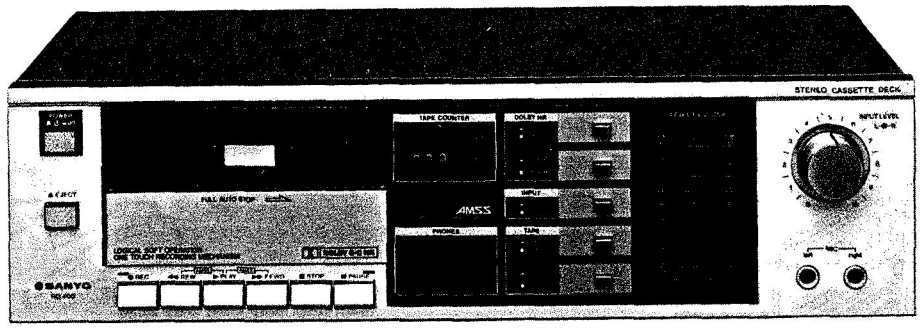
SERVICE MANUAL

CASSETTE TAPE DECK

SANYO

RD 400
(EUROPE)



SPECIFICATIONS

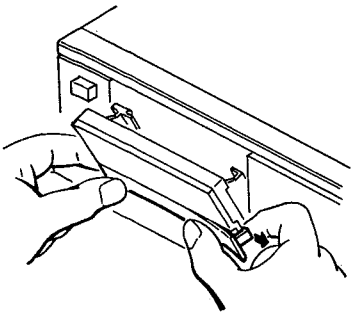
NOTE:
The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

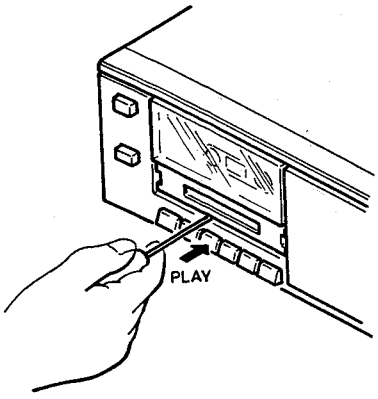
Tape	Metal, CrO_2, normal tape
Recording system	AC bias, 4-track stereo
Erasing system	AC erasing, 2-track
Tape speed	4.75 cm/sec. (1-7/8 i.p.s.)
Rewind and fast forward time	Approx. 110 sec. (C–60)
Wow and flutter	0.05% (WRMS)
Frequency response	40 – 18,000 Hz (metal)
	40 – 17,000 Hz (CrO_2)
	40 – 13,000 Hz (normal)
Signal to noise ratio	
(metal tape)	77 dB (Dolby C-NR on)
	57 dB (Dolby NR off)
Inputs	MIC: 400 ohms to 10 kohms
	(0.3 mV)
	LINE IN: 50 kohms (100 mV)
Outputs	LINE OUT: 2 kohms (0.4 V)
	PHONES: 8 ohms to 10 kohms
Power requirements	AC: 220 V, 50 Hz
Power consumption	13 W
Dimensions (Approx.)	420 (W) x 220 (D) x 110 (H) mr
	(16-1/2" x 8-5/8" x 4-3/8")
Weight (Approx.)	4 kg (9 lbs.)

* Specifications subject to change without notice.

Head replacement and azimuth adjustment

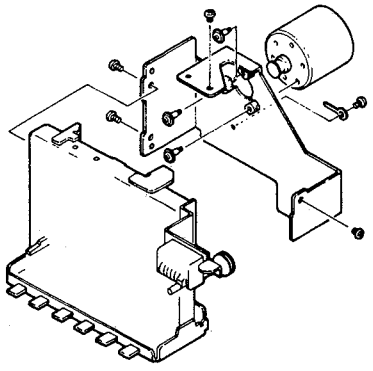
After replacing the head, demagnetize (clean) it with head cleanings and head silencer. Play back the test tape for azimuth adjustment (VTT-658, 10 kHz for instance), and turn the azimuth adjusting screw with Phillips screwdriver so that the left and right outputs of both SIDE 1 and SIDE 2 of cassette will be maximized.





Motor replacement and speed regulation

Play back the test tape (MTT-111, 3 kH for instance), and turn the SVR located on the back of motor with blade screwdriver so that the frequency counter will indicate 3,000 Hz.



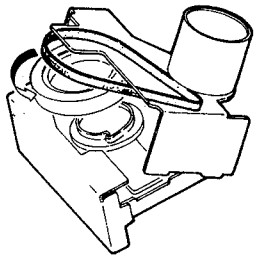
Mechanism adjustment

* Before measurement, clean the head, capstan and pinch roller.
* Check torque and tensions.

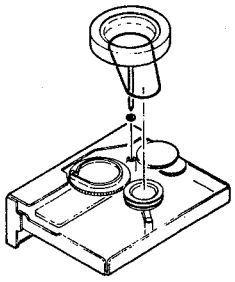
Measuring item	Take-up torque	Back tension	Tape tension
Measurement cassette	PLAY: TW-2111 F.FWD/REW: TW-2231	PLAY/F.FWD: TW-2111 REW: towque gauge	Drive power cassette TW-2412
PLAY	35~60 gr.cm	3~5 gr.cm	Greater than 180 gr.
F.FWD	90~130 gr.cm	3~5 gr.cm	–
REW	90~130 gr.cm	4~8 gr.cm	–

Belt replacement

1. Flat Belt, Flywheel
   141-2-561T-05271

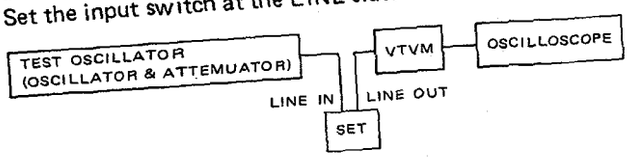


2. Square Belt, Idler
   141-2-564T-23971



ADJUSTMENT OF AMPLIFIER UNIT

* Adjust as follows after cleaning the head and adjusting its azimuth properly.
* Set the input switch at the LINE side.



(1) Adjustment of playback output

DOLBY NR switch: OFF
Tape selector: NORMAL
Test tape: MTT-150 (Dolby tape)

Play back test tape, and turn SVR701 (L-ch), SVR801 (R-ch) until the playback output becomes 0.56 V.

(2) Adjustment of level meter

DOLBY NR switch: OFF
Tape switch: NORMAL
Input signal: –20 dB, 1KHz
Tape: NORMAL (AC-212 etc.)

1. Feed input signal to record input terminal, and pause the set in record mode.
2. Turn the input level adjusting knob until the record monitor output becomes 0.4 V.
3. Adjust SVR703 (L-CH) and SVR803 (R-CH) so that the "0 dB" LED of level meter begins to light up.
4. Next, attenuates the input signal by 15 dB.
5. Adjust SVR704 (L-CH) and SVR804 (R-CH) so that the "–15 dB" LED of level meter begins to light up.
6. Repeat the foregoing steps 1 thru 5.

(3) Adjustment of record, playback output

DOLBY NR switch: OFF
Tape selector: METAL
Input signal: –20 dB, 1 kHz
Tape: Metal tape (AC-711 or the like)

1. Feed input signal to record input terminal, and pause the set in record mode.
2. Turn the input level adjusting knob until the record monitor output becomes 0.4 V.
3. Record this input signal.
4. Press the rewind button the rewind the tape to the record starting position.
5. Press the play button.
6. Make sure the playback output is 0.4 V.
7. If other than 0.4 V, turn SVR702 (L-ch), SVR802 (R-ch) to adjust.
8. Repeat steps 3. to 7. to adjust the playback output to 0.4 V precisely.

(4) Adjustment and checking of record, playback frequency characteristics

(4.1) Adjustment with metal tape

DOLBY NR switch: OFF
Tape selector: METAL
Input signal: –40 dB (1 kHz, 12 kHz)
Tape: Metal tape (AC-711 or the like)

1. Set the input level adjusting knob in the position determined in adjustment (3) above.
2. Attenuate the input signal from –20 dB in (3) by further 20 dB to a final –40 dB.
3. Change the frequency of audio frequency signal generator from 1 kHz to 12 kHz, and record the signals. (Change as follows: 1, 12, 1, 12 kHz.)
4. Press the rewind button to rewind the tape to the record starting position.
5. Press the play button.
6. Regarding the playback output of 1 kHz signal as 0 dB, make sure the value of 12 kHz signal is within a range of ±1 dB.
7. If out of this range, turn SVR601 (L-ch), SVR602 (R-ch) to adjust.
8. Repeat steps 3. to 7.
9. After adjusting with metal tape, adjust similarly with normal tape and chrome tape in the sequence of parts. 4.2 and 4.3 below.

(4.2) Adjustment with normal tape

Tape selector: NORMAL
Input signal: –40 dB (1 kHz, 10 kHz)
Tape: Normal tape (AC-212 or the like)

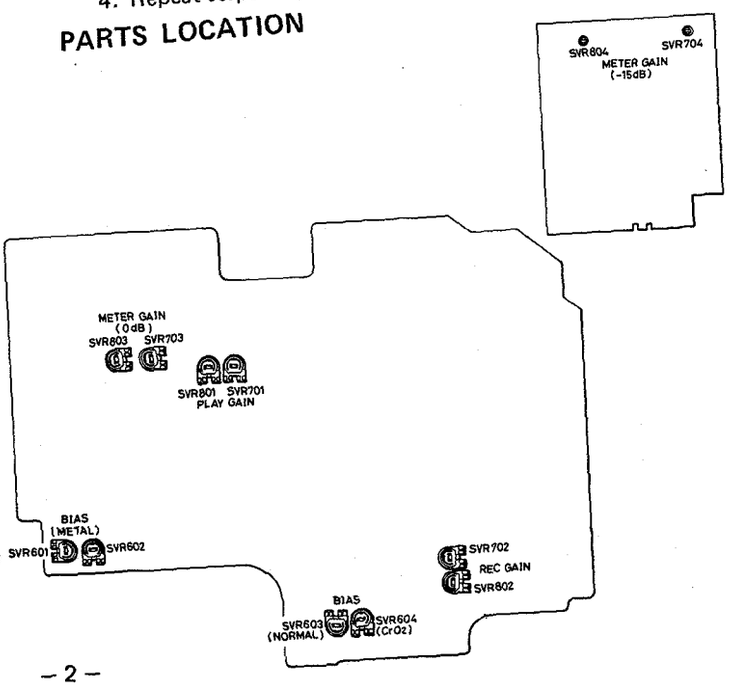
1. Record and play back 1 kHz and 10 kHz signals by changing the frequency of audio frequency signal generator.
2. Regarding the playback output of 1 kHz signal as 0 dB, make sure the value of 10 kHz is within a range of ±1 dB.
3. If out of this range, turn SVR603 (which can adjust both channels simultaneously).
4. Repeat steps 1. to 3.

(4.3) Adjustment with CrO_2 tape

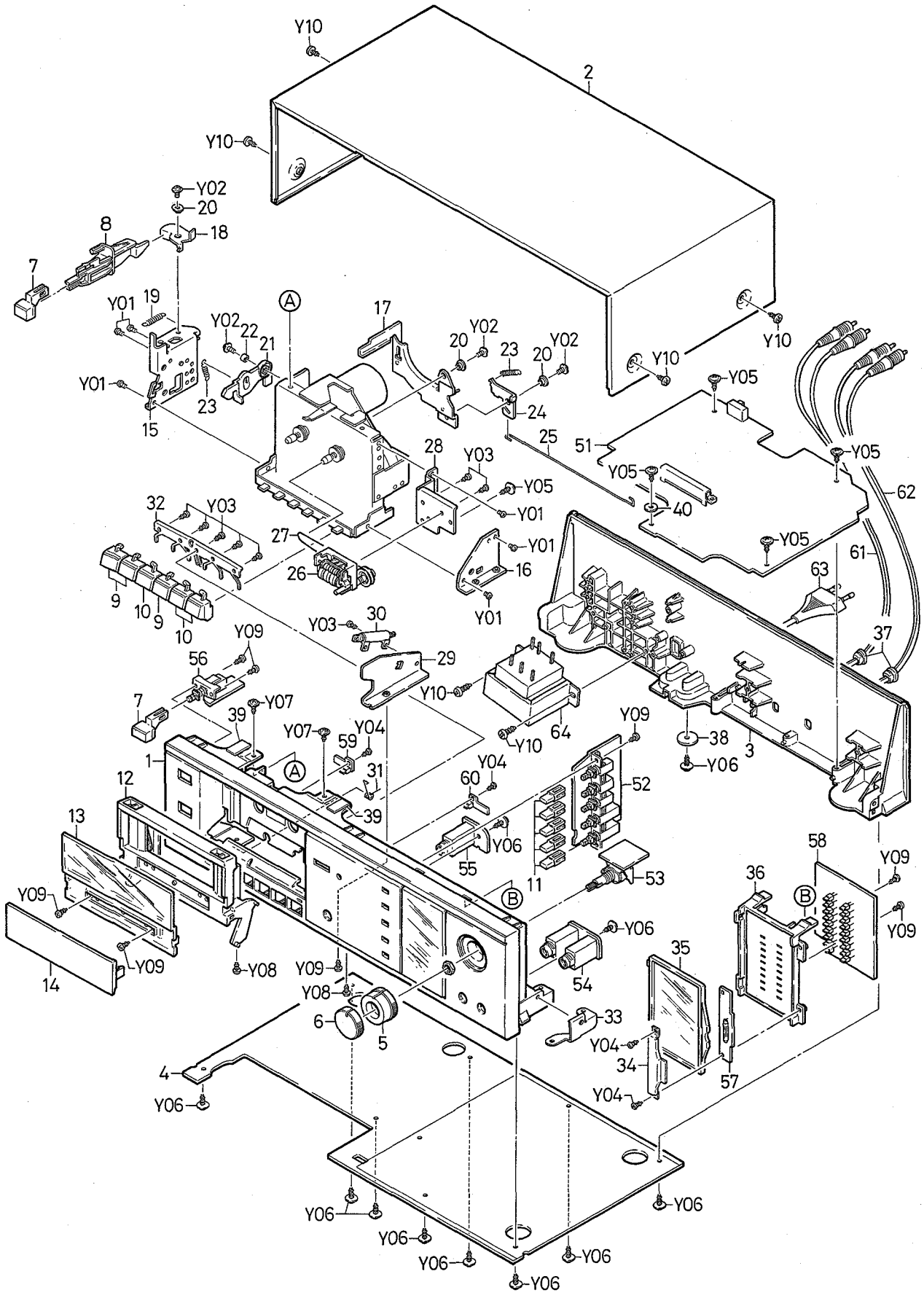
Tape selector: CrO_2
Input signal: –40 dB (1 kHz, 12 kHz)
Tape: Chrome tape (AC-512 or the like)

1. Record and play back 1 kHz and 12 kHz signals by changing the frequency of audio frequency signal generator.
2. Regarding the playback output of 1 kHz signal as 0 dB, make sure the value of 12 kHz is within a range of ±1 dB.
3. If out of this range, turn SVR604 (which can adjust both channels simultaneously).
4. Repeat steps 1. to 3.

PARTS LOCATION



CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
PACKING			
	141-6-133T-38302	Individual Carton	1
	141-6-144T-84200	Pad, Left Side	1
	141-6-144T-84300	Pad, Right Side	1
	141-6-410T-81002	Instruction Manual	1
	141-6-331T-07800	Protector Sheet, 470x800mm	1
	141-6-231T-40701	Polyethylene Bag, 400x700mm, Set	1
CABINET & CHASSIS			
1	141-0-122T-46402	Front Panel Assembly	1
2	141-2-111T-55000	Cabinet	1
3	141-0-126T-36715	Back Lid Assembly	1
4	141-2-125T-29701	Bottom Lid	1
5	141-2-163T-81630	Rotary Knob, INPUT LEVEL (L)	1
6	141-2-163T-81530	Rotary Knob, INPUT LEVEL (R)	1
7	141-2-160T-16500	Push Button, POWER/EJECT	2
8	141-2-253T-33000	Joint, EJECT	1
9	141-2-160T-16600	Push Button, REC/REW/ F. FWD	3
10	141-2-160T-17300	Push Button, PLAY/STOP/ PAUSE	3
11	141-2-160T-09700	Push Button, DOLBY NR/ INPUT/TAPE	5
12	141-2-224T-14000	Bracket Lid, Cassette	1
13	141-2-124T-37100	Top Lid, Cassette Compartment Lid	1
14	141-2-153T-85100	Escutcheon, Cassette Compartment Lid	1
15	141-2-351T-54700	Bracket Mounting, Mechanism Left	1
16	141-2-310T-58200	Bracket, Mechanism Right	1
17	141-2-732T-02400	Slide, Mechanism Back	1
18	141-2-742T-67500	Lever, Eject Button Return	1
19	141-2-855T-80300	Spring Coil	1
20	141-2-462T-68400	Boss	3
21	141-2-742T-67600	Lever	1
22	141-2-462T-69200	Boss	1
23	141-2-855T-86900	Spring Coil	2
24	141-2-310T-73500	Bracket	1
25	141-2-852T-79400	Spring Wire, Record/Play	1
26	141-2-811T-11700	Counter, Tape	1
27	141-2-564T-28300	Square Belt	1
28	141-2-812T-11900	Bracket Counter	1
29	141-2-310T-79800	Bracket, Damper	1
30	141-2-877T-00100	Damper	1
31	141-2-855T-79400	Spring Coil	1
32	141-2-853T-80500	Spring Plate, Mechanism Push Button	1
33	141-2-310T-79900	Bracket, Ground	1
34	141-2-329T-08800	Reflector, Lamp	1
35	141-2-143T-92700	Marking Plate, Level Indicator	1
36	141-2-210T-43400	Bracket, Level Indicator	1
37	141-2-464T-29700	Fixer, Lead Cord	2
38	123-2-453R-10500	Plastic Washer, Power Cord mtg.	1
39	141-2-246T-17704	Sheet, Fiber, 10x20x2.4mm	2
40	141-2-453T-01000	Washer, Fiber, 3x12x1mm	1
CABINET & CHASSIS (HARDWARE)			
Y01		Pan Hd. Forming Screw, 3x4mm	6
Y02		Pan Hd. Forming Screw with Washer, 3x6mm	4
Y03		Pan Hd. Tapping Screw, 2.6x6mm	8
Y04		Pan Hd. Tapping Screw, 2.6x8mm	4
Y05		Pan Tapping Washer Hd. Screw, 3x10mm	5
Y06		Pan Tapping Washer Hd. Screw, 3x12mm	11
Y07		Pan Tapping Washer Hd. Screw, 3x6mm	2
Y08		Binding Hd. Tapping Screw, 3x8mm	2
Y09		Binding Hd. Tapping Screw, 3x10mm	8
Y10		Binding Hd. Tapping Screw, 4x10mm	6

Key No.	Part No.	Description	Q'ty
ELECTRICAL PARTS			
61	4-243T-19774	Lead Cord, Gray, LINE OUT	1
62	4-243T-19775	Lead Cord, Black, LINE IN	1
63	4-243T-84974	Power Cord	1
64	4-300T-60500	Power Transformer (T901)	1
	141-6-479T-50700	Label, 0/110/220V, Power Transformer mtg.	1
AMP PCB ASS'Y			
51	141-4-250T-63174	P.C.B. Assembly, AMP.	1
IC301		Integrated Circuit, BA338	1
IC401		Integrated Circuit, NE654N	2
501			
IC402		Integrated Circuit, NE652N	2
502			
IC701		Integrated Circuit, NJM4562SD	1
IC702		Integrated Circuit, NJM4558S	1
IC703		Integrated Circuit, NJM4558S	1
Q301		Transistor, 2SA608 or 2SA1015	1
Q601,602		Transistor, 2SC536AUD or 2SC1815	2
Q603		Transistor, 2SD734 or 2SC1959	1
Q604		Transistor, 2SC536AUD or 2SC1815	1
Q605,606		Transistor, 2SA608 or 2SA1015	2
Q607,608		Transistor, 2SC536AUD or 2SC1815	2
Q701,801		Transistor, 2SC536AUD or	6
702,802		2SC1815	
703,803			
Q901		Transistor, 2SD400 or 2SC2655	1
Q902		Transistor, 2SB544 or 2SA1020	1
D301		Diode, DS135E	1
D602,604		Diode, DS442X	2
D605		Diode, DS135E	1
D901,902		Diode, DS135E	5
903,904			
908			
D906,907		Diode, GZA9.1X	2
L401,501	4-255T-04271	MX Coil, 85kHz, 19kHz	2
L601	4-258T-33140	Oscillator Coil	1
L701,801	4-252T-12922	Choke Coil, 6.8mH	2
L702,802	4-255T-02371	MX Coil	2
S1	4-238T-55600	Switch, Record/Play	1
S7	4-238T-22700	Switch, Beat Cancel	1
CNP1	4-236T-10200	Plug, 3P, R/P Head	1
CNP2	4-236T-19779	Plug, 12P, Mechanism	1
CNS3	4-240T-11271	Socket, 4P, Level Meter	1
CNS4	4-240T-24400	Socket, 2P Erasing Head	1
SVR601	4-222T-97578	Semi-fixed Resistor, 100K ohm	2
602			
SVR603	4-222T-97573	Semi-fixed Resistor, 2K ohm	1
SVR604	4-222T-97574	Semi-fixed Resistor, 5K ohm	1
SVR701	4-222T-97575	Semi-fixed Resistor, 10K ohm	2
801			
SVR702	4-222T-97576	Semi-fixed Resistor, 20K ohm	2
802			
SVR703	4-222T-97574	Semi-fixed Resistor, 25K ohm	2
803			
	RESISTORS		
All Resistors are Carbon P-type 1/4W, ±5% unless otherwise noted.			
R301		10K ohm	1
R302		10K ohm	1
R303		390K ohm	1
R304		27K ohm	1
R305		3.3K ohm	1
R306		68K ohm	1
R307		100 ohm	1
R401,501		3.3K ohm	2
R402,502		5.6K ohm	2
R403,503		6.8K ohm	2
R404,504		6.8K ohm	2
R405,505		1K ohm	2
R406,506		68K ohm	2
R407,507		1.2K ohm	2

PARTS LIST

Key No.	Part No.	Description	Q'ty
AMP PCB ASS'Y			
R408,508		3.9K ohm	2
R409,509		2.2K ohm	2
R410		100K ohm	1
R411,511		4.7K ohm	2
R412,512		12K ohm	2
R413,513		47K ohm	2
R414,514		150K ohm	2
R415,515		150K ohm	2
R416,516		82K ohm	2
R417,517		330K ohm	2
R418,518		390K ohm	2
R419,519		390K ohm	2
R420,520		330K ohm	2
R601		39K ohm	1
R602		8.2 ohm	1
R603		39K ohm	1
R604		15 ohm, Flame proof	1
R605		1.5K ohm	1
R606		10 ohm	1
R607		6.8K ohm	1
R608		10K ohm	1
R609		10K ohm	1
R610		15K ohm	1
R611		33K ohm	1
R612		4.7K ohm	1
R613		47 ohm	1
R614		10K ohm	1
R615		10K ohm	1
R616		10K ohm	1
R617		10K ohm	1
R618		10K ohm	1
R619		3.9K ohm	1
R620		10K ohm	1
R621		680 ohm	1
R622		4.7K ohm	1
R623		10K ohm	1
R701,801		6.8K ohm	2
R703,803		270K ohm	2
R704,804		120 ohm	2
R705,805		10K ohm	2
R706,806		6.8K ohm	2
R707,807		10K ohm	2
R708,808		15K ohm	2
R709,809		47K ohm	2
R710,810		1M ohm	2
R711,811		47K ohm	2
R730,830		10K ohm	2
R731,831		3.3K ohm	2
R732,832		100K ohm	2
R733,833		10K ohm	2
R734,834		33K ohm	2
R735,835		270 ohm	2
R736,836		2.2K ohm	2
R737,837		5.6 K ohm	2
R751,85.		5.6K ohm	2
R752,852		10K ohm	2
R753,853		33K ohm	2
R754,854		100 ohm	2
R755,855		22K ohm	2
R764,864		12K ohm	2
R902		39 ohm, 3W, Metal Oxide	1
R903		1.8K ohm	1
R904		1.8K ohm	1
R905		56 ohm	1
R906		56 ohm	1
R907		3.9K ohm	1
R908		2.7K ohm	1
C301		Electrolytic 1μF 50V	1
C302		Electrolytic 0.22μF 50V	1
C303		Electrolytic 4.7μF 25V	1
C304		Electrolytic 1μF 50V	1
C305		Electrolytic 10μF 16V	1
C306		Electrolytic 22μF 16V	1
C401,501		Electrolytic, 0.33μF 50V	2
C402,502		Ceramic, 0.0033μF ±5% 25V BC-type	2
C403,503		Electrolytic 10μF 16V	2

Key No.	Part No.	Description	Q'ty
AMP PCB ASS'Y			
C404,504		Ceramic 47pF ±10% 50V	2
C405,505		Ceramic 180pF ±10% 50V	2
C406,506		Ceramic 0.01μF ±5% 25V BC-type	2
C407		Electrolytic 1μF 50V	1
C408,508		Ceramic 0.033μF ±5% 25V BC-type	2
C409,509		Ceramic 0.0047μF ±5% 25V BC-type	2
C410,510		Ceramic 0.0047μF ±5% 25V BC-type	2
C411,511		Electrolytic 10μF 16V	2
C412,512		Electrolytic 10μF 16V	2
C413,513		Electrolytic 10μF 16V	2
C414,514		Ceramic 0.068μF ±5% 25V BC-type	2
C415,515		Ceramic 0.047μF ±5% 25V BC-type	2
C416,516		Ceramic 0.033μF ±5% 25V BC-type	2
C417,517		Electrolytic 0.1μF 50V	2
C418,518		Electrolytic 0.15μF 50V	2
C419,519		Electrolytic 0.1μF 50V	2
C420,520		Ceramic 0.033μF ±5% 25V BC-type	2
C421,521		Electrolytic 0.22μF 50V	2
C600		Ceramic, 0.01μF, +80-20%, 50V	1
C601		Ceramic 180pF ±10% 50V	1
C602		Ceramic 180pF ±10% 50V	1
C603		Ceramic 100pF ±10% 50V	1
C604		Polypropylene 0.0015μF ±5% 100V	1
C605		Ceramic 390pF ±10% 50V	1
C606		Ceramic 0.015μF ±5% 25V BC-type	1
C607		Ceramic 0.0033μF ±5% 25V BC-type	1
C608		Ceramic 0.01μF ±5% 25V BC-type	1
C609		Ceramic 0.0033μF ±5% 25V BC-type	1
C610		Electrolytic 10μF 16V	1
C611		Electrolytic 1μF 25V Non-polar	1
C613		Electrolytic, 4.7μF, 25V	1
C615		Electrolytic 1μF 50V	1
C702,802		Ceramic 680pF ±10% 50V	2
C703,803		Electrolytic 47μF 6.3V	2
C704,804		Ceramic 100pF ±10% 50V	2
C705,805		Ceramic 0.012μF ±5% 25V BC-type	2
C706,806		Ceramic 100pF ±10% 50V	2
C708,808		Ceramic 0.0047μF ±5% 25V BC-type	2
C730,830		Electrolytic 4.7μF 25V	1
C750,850		Electrolytic 0.22μF 50V	1
C751,851		Ceramic 0.01μF ±5% 25V BC-type	1
C752,852		Electrolytic 4.7μF 25V	1
C756,856		Ceramic 680pF ±10% 25V	1
C900		Electrolytic 100μF 10V	1
C903		Electrolytic 1000μF 16V	1
C904		Electrolytic 470μF 16V	1
C905		Electrolytic 470μF 10V	1
C906		Electrolytic 470μF 10V	1
C907		Electrolytic 47μF 16V	1
C908		Electrolytic 47μF 16V	2
C910		Ceramic 0.01μF +80—20% 50V	2
C911		Ceramic 0.01μF +80—20% 50V	2
C912		Ceramic 0.01μF +80—20% 50V	
C913		Ceramic 0.01μF +80—20% 50V	2
C917		Electrolytic 10μF 25V	2
C918		Electrolytic 4.7μF 25V	1
C919		Ceramic 1000pF ±10% 25V	1

PARTS LIST

Key No.	Part No.	Description	Q'ty
DOLBY/INPUT/TAPE SWITCH PCB ASS'Y			
52	141-4-250T-63272	P.C.B. Assembly, DOLBY/ INPUT/TAPE Switch	1
S2,3,4,5 6	4-238T-55800	Switch, DOLBY NR/INPUT/ TAPE	1
	123-2-472R-00401	Lug, Ground	1
	RESISTORS		
All resistors are Carbon P-type 1/4W, ±5% unless otherwise noted.			
R421		3.3K ohm	1
R702,802		33K ohm	2
R760,860		5.6K ohm	2
R761,861		22K ohm	2
R762,862		12K ohm	2
R763,863		8.2K ohm	2
R765,865		12K ohm	2
	CAPACITORS		
C422		Electrolytic 22μF 16V	1
C753,853		Ceramic 0.0022μF ±10% 25V BC-type	2
C754,854		Ceramic 0.0047μF ±10% 25V BC-type	2
C755,855		Ceramic 0.015μF ±10% 25V BC-type	2
C760,860		Ceramic 0.001μF ±10% 25V BC-type	2
INPUT LEVEL VOLUME PCB ASS'Y			
53	141-4-250T-63372	P.C.B. Assembly INPUT LEVEL VOLUME	1
VR701 801	4-220T-02700	Variable Resistor, 50K ohm, INPUT LEVEL	1
MIC SOCKET PCB ASS'Y			
54	141-4-250T-63472	P.C.B. Assembly, MIC SOCKET	1
	4-240T-09174	Socket, MIC	2
PHONES PCB ASS'Y			
55	141-4-250T-63572	P.C.B. Assembly, PHONES	1
	4-235T-99281	Socket, PHONES	1
POWER SWITCH PCB ASS'Y			
56	141-4-250T-63672	P.C.B. Assembly, POWER SWITCH	1
S14	4-238T-37500	Switch, POWER	1
	141-2-382T-07300	Terminal	2
LAMP PCB ASS'Y			
57	141-4-250T-63772	P.C.B. Assembly, LAMP	1
PL1	4-612T-13700	Lamp, 8V 150mA	1

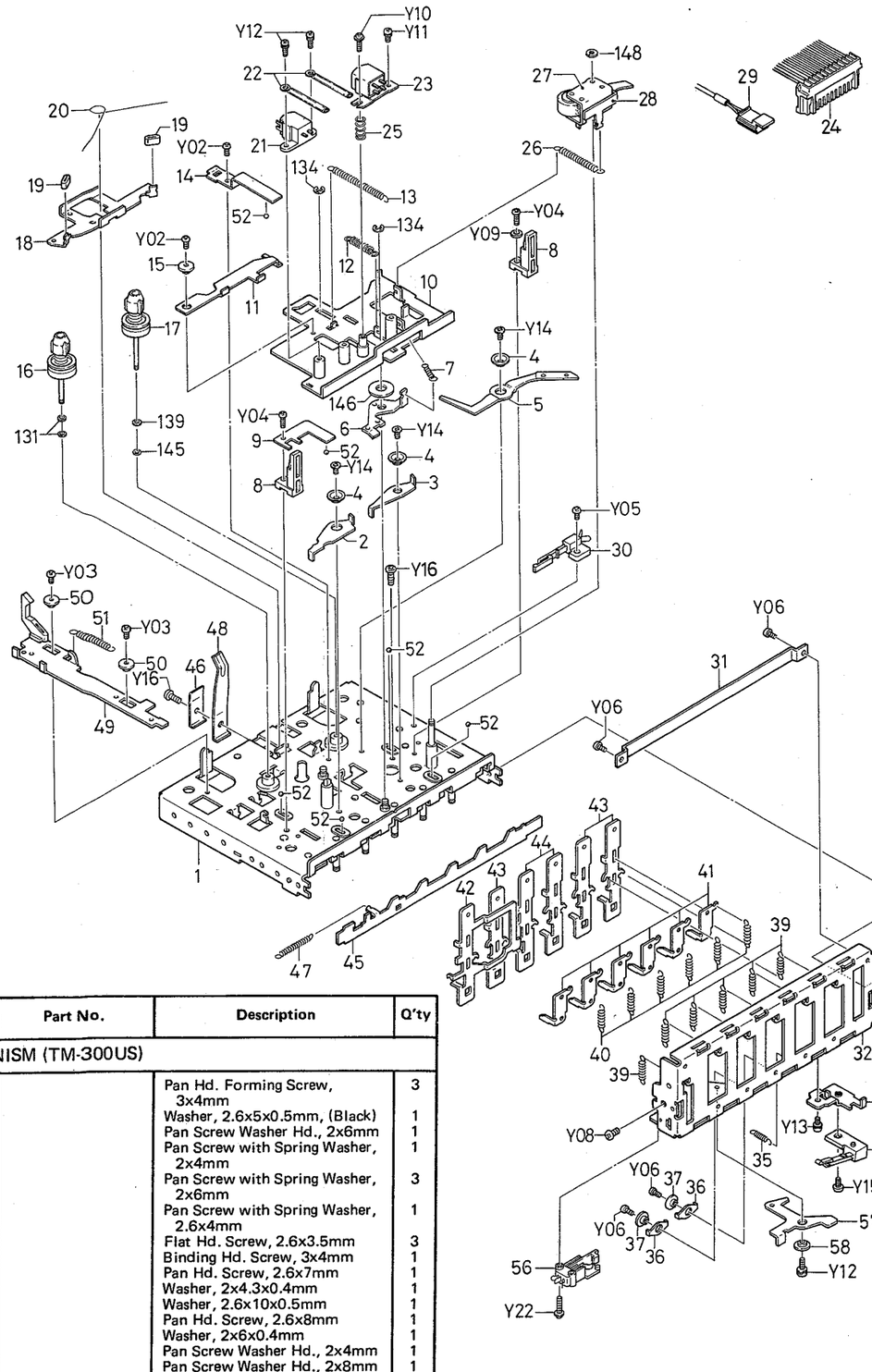
Key No.	Part No.	Description	Q'ty
LEVEL INDICATOR PCB ASS'Y			
58	141-4-250T-63800	P.C.B. Assembly, LEVEL INDICATOR	1
IC704 804		Integrated Circuit, LB1419	2
Q705,805 706,806 707,807 708,808		Transistor, 2SA1015 or 2SA608	8
D1,2,3,4 5,6,7,8 9,10,11 12		LED, SLP251B, Green	12
D13,14, 15,16 17,18		LED, SLP151B, Red	6
	4-222T-97572		
SVR704 804		Semi-fixed Resistor, 1K ohm	2
	RESISTORS		
All Resistors are Carbon P-type 1/4W, ±5% unless otherwise noted.			
R740,840		220 ohm	2
R741,841		56 ohm	2
R742,842		56 ohm	2
R743,843		180 ohm	2
R744,844		18K ohm	2
R745,845		8.2K ohm	2
R746,846		33K ohm	2
R747,847		18K ohm	2
R748,848		220K ohm	2
R749,849		5.6K ohm	2
R750,850		2.7K ohm	2
	CAPACITORS		
C740,840		Electrolytic 1μF 50V	2
C741,841		Electrolytic 22μF 10V	2
RECORD LED PCB ASS'Y			
59	141-4-250T-64700	P.C.B. Assembly, RECORD LED	1
D20		LED, SLP151B, Red, RECORD	1
PAUSE LED PCB ASS'Y			
60	141-4-250T-64800	P.C.B. Assembly, PAUSE LED	1
D21		LED, SLP151B, Red PAUSE	1

PARTS LIST

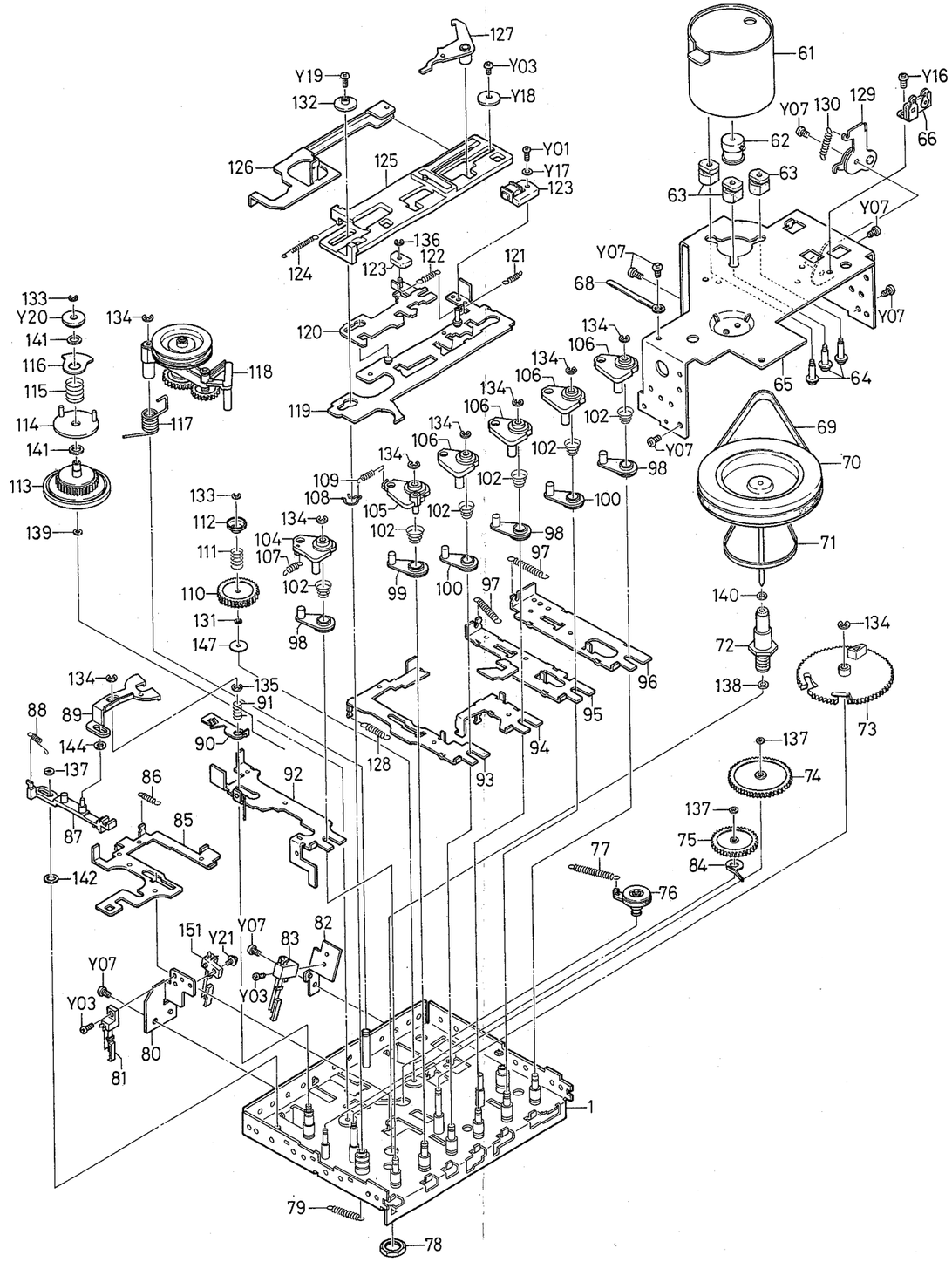
Key No.	Part No.	Description	Q'ty
MECHANISM (TM-300US)			
1	141-0-311T-37200	Chassis Assembly	1
2	141-2-742T-62701	Lever, Head Slide, Review	1
3	141-2-742T-62801	Lever, Head Slide, Cue	1
4	141-2-462T-67400	Boss, Lever	3
5	141-2-742T-62900	Lever, PAUSE	1
6	141-2-742T-62600	Lever	1
7	141-2-851T-56100	Spring Coil	1
8	141-2-530T-00800	Guide, Cassette	2
9	141-2-853T-72900	Spring Plate, Head Slide	1
10	141-0-731T-89100	Slide Assembly, Head Slide	1
11	141-2-742T-66300	Lever	1
12	141-2-855T-74900	Spring Coil	1
13	141-2-855T-74800	Spring Coil	1
14	141-2-853T-71000	Spring Plate, Head Slide	1
15	141-2-462T-68700	Boss	1
16	141-0-531T-13300	Reel Plate Assembly, Left	1
17	141-0-531T-13301	Reel Plate Assembly, Right	1
18	141-2-731T-89300	Slide, Brake	1
19	141-2-712T-03401	Brake Shoe	2
20	141-2-852T-68100	Spring Wire, Brake Slide	1
21	4-242T-27500	Magnetic Head, Erase	1
22	141-2-472T-05900	Lug, Lead mtg.	2
23	4-242T-25371	Magnetic Head, Record/Play	1
24	4-240T-37700	Socket, 12P CNS2	1
25	141-2-851T-54500	Spring Coil, Head Azimuth	1
26	141-2-855T-74700	Spring Coil, Pinch Roller	1
27	141-0-545T-07200	Lever Pinch Roller Assembly	1
28	141-2-742T-66500	Lever	1
29	4-235T-60300	Socket, R/P Head CNS1	1
30	4-238T-31200	Switch, PLAY ON, S9	1
31	141-2-352T-50300	Spacer	1
32	141-2-737T-08200	Bracket Slide	1
33	141-2-365T-55000	Bracket Switch	1
34	4-238T-35200	Switch, STOP MUTE, S8	1
35	141-2-856T-02200	Spring Coil	1
36	141-2-742T-60300	Lever	2
37	141-2-462T-67200	Boss	2
38		Not used	
39	141-2-855T-76100	Spring Coil	6
40	141-2-855T-80500	Spring Coil	6
41	141-2-731T-92500	Slide	6
42	141-2-731T-92300	Slide, RECORD	1
43	141-2-731T-90901	Slide REW/STOP/PAUSE	3
44	141-2-731T-90900	Slide, PLAY/F. FWD	2
45	141-2-731T-87700	Slide	1
46	141-2-853T-71101	Spring Plate	1
47	141-2-855T-74500	Spring Coil	1
48	141-2-853T-71100	Spring Plate, Cassette	1
49	141-0-731T-89200	Slide Assembly	1
50	141-2-462T-67800	Boss	2
51	141-2-855T-05000	Spring Coil	1
52	141-2-345T-00400	Steel Ball, 2mm	6
53		Not used	
54		Not used	
55		Not used	
56	4-238T-37800	Switch, TRIGGER S12	1
57	141-2-742T-70900	Lever, TRIGGER Switch	1
58	141-2-462T-69800	Boss, TRIGGER Switch	1
61	4-527T-15172	Motor	1
62	141-0-661T-76203	Pulley Motor Assembly	1
63	141-2-445T-11801	Rubber Cushion, Motor	3
64	141-2-421T-27500	Special Screw, Motor	3
65	141-0-378T-11701	Bracket Motor Assembly	1
66	4-237T-10600	Terminal Board	1
67		Not used	
68	141-2-472T-01201	Lug, Lead mtg.	1
69	141-2-561T-05271	Flat Belt, Flywheel	1
70	141-0-521T-12121	Flywheel Assembly	1
71	141-2-564T-23971	Square Belt, Idler	1
72	141-0-573T-13600	Bearing Assembly	1
73	141-2-581T-19600	Gear	1
74	141-2-581T-19500	Gear	1
75	141-2-581T-19100	Gear, Auto Stop	1
76	141-0-551T-03620	Idler Assembly, PLAY	1
77	141-2-855T-75600	Spring Coilg	1
78	141-2-411T-02600	Plate Nut	1
79	141-2-855T-75000	Spring Coil	1
80	141-2-365T-54200	Bracket Switch, PAUSE	1
81	4-231T-71200	Switch, PAUSE, S13	1
82	141-2-365T-54100	Bracket Switch, REW/F. FWD	1
83	4-238T-31100	Switch, REW/F. FWD, S10	1

Key No.	Part No.	Description	Q'ty
MECHANISM (TM-300US)			
84	141-2-853T-70900	Spring Plate	1
85	141-2-731T-87100	Slide, Brake	1
86	141-2-855T-75400	Spring Coil	1
87	141-2-731T-86400	Slide	1
88	141-2-856T-01100	Spring Coil	1
89	141-2-731T-86500	Slide	1
90	141-2-614T-06000	Lever Lock, PAUSE	1
91	141-2-852T-68000	Spring Wire	1
92	141-0-731T-87200	Slide Assembly, PAUSE	1
93	141-2-731T-87000	Slide, F. FWD	1
94	141-2-731T-86900	Slide, PLAY	1
95	141-2-731T-86800	Slide, REW	1
96	141-2-731T-86701	Slide, RECORD	1
97	141-2-855T-75300	Spring Coil	2
98	141-0-352T-50602	Spacer Assembly, PAUSE/ RECORD/PLAY	3
99	141-0-352T-50604	Spacer Assembly, STOP	1
100	141-0-352T-50603	Spacer Assembly, F.FWD/REW	2
101		Not used	
102	141-2-855T-71801	Spring Goil	6
103		Not used	
104	141-2-742T-59901	Lever	1
105	141-2-742T-60000	Lever	1
106	141-2-742T-59900	Lever	4
107	141-2-855T-80100	Spring Coil	1
108	141-2-852T-70200	Spring Wire	1
109	141-2-855T-80200	Spring Coil	1
110	141-2-581T-19000	Gear, Reel Pulley	1
111	141-2-855T-68100	Spring Coil, Reel	1
112	141-2-352T-49900	Spacer, Reel	1
113	141-0-661T-32001	Pulley Assembly, Reel	1
114	141-2-671T-06400	Cam	1
115	141-2-855T-76400	Spring Coil	1
116	141-2-352T-48300	Spacer	1
117	141-2-855T-74600	Spring Coil	1
118	141-0-742T-60400	Lever Assembly, Idler	1
119	141-0-731T-87502	Slide Assembly	1
120	141-0-731T-86600	Slide Assembly, AMSS Lock	1
121	141-2-855T-75500	Spring Coil	1
122	141-2-855T-78600	Spring Coil	1
123	4-264T-10300	Magnetic Coil, Solenoid	1
124	141-2-855T-75800	Spring Coil	1
125	141-2-731T-87400	Slide	1
126	141-2-732T-03500	Slide, AUTO STOP	1
127	141-0-742T-60100	Lever Assembly	1
128	141-2-855T-75100	Spring Coil	1
129	141-0-742T-70800	Lever Assembly	1
130	141-2-855T-05000	Spring Coil	1
131	141-2-457T-10200	Special Washer 2.1x3x0.5mm	3
132	141-2-457T-36300	Special Washer	1
133	141-2-457T-23700	Special Washer 1.2x3x0.3mm	2
134	141-2-457T-23000	Special Washer 2x5x0.4mm	11
135	141-2-457T-23100	Special Washer 3x7x0.6mm	1
136	141-2-457T-23800	Special Washer 1.5x4x0.4mm	1
137	141-2-457T-04100	Special Washer 1.7x4.5x0.5mm	3
138	141-2-457T-04300	Special Washer	1
139	141-2-453T-30102	Washer 2.1x4x0.5mm	2
140	141-2-453T-30202	Washer 2.6x4.7x0.5mm	1
141	141-2-453T-30501	Washer 4.1x6.5x0.25mm	2
142	141-2-453T-30500	Special Washer 4x6.5x0.15mm	1
143		Not used	
144	141-2-453T-30301	Washer, 3.1x5.4x0.25mm	1
145	141-2-453T-30101	Special Washer 2.1x4x0.25mm	1
146	141-2-457T-33400	Special Washer 5.2x11.5x0.3mm	1
147	141-2-457T-06200	Special Washer 2.1x9x0.3mm	1
148	141-2-457T-41600	Special Washer, 2x5x0.5mm	1
149		Not used	
150		Not used	
151	4-238T-09600	Switch, Motor Power, S11	1
HARDWARE			
Y01		Pan Hd. Screw, 2x6mm, (Brass-type)	1
Y02		Pan Hd. Screw, 2.6x3mm	2
Y03		Pan Hd. Screw, 2.6x4mm	5
Y04		Pan Hd. Screw, 2.6x6mm, (Black)	2
Y05		Pan Hd. Screw, 3x4mm	1
Y06		Pan Hd. Forming Screw, 2.6x4mm	4
Y07		Pan Hd. Forming Screw, 3x4mm	8

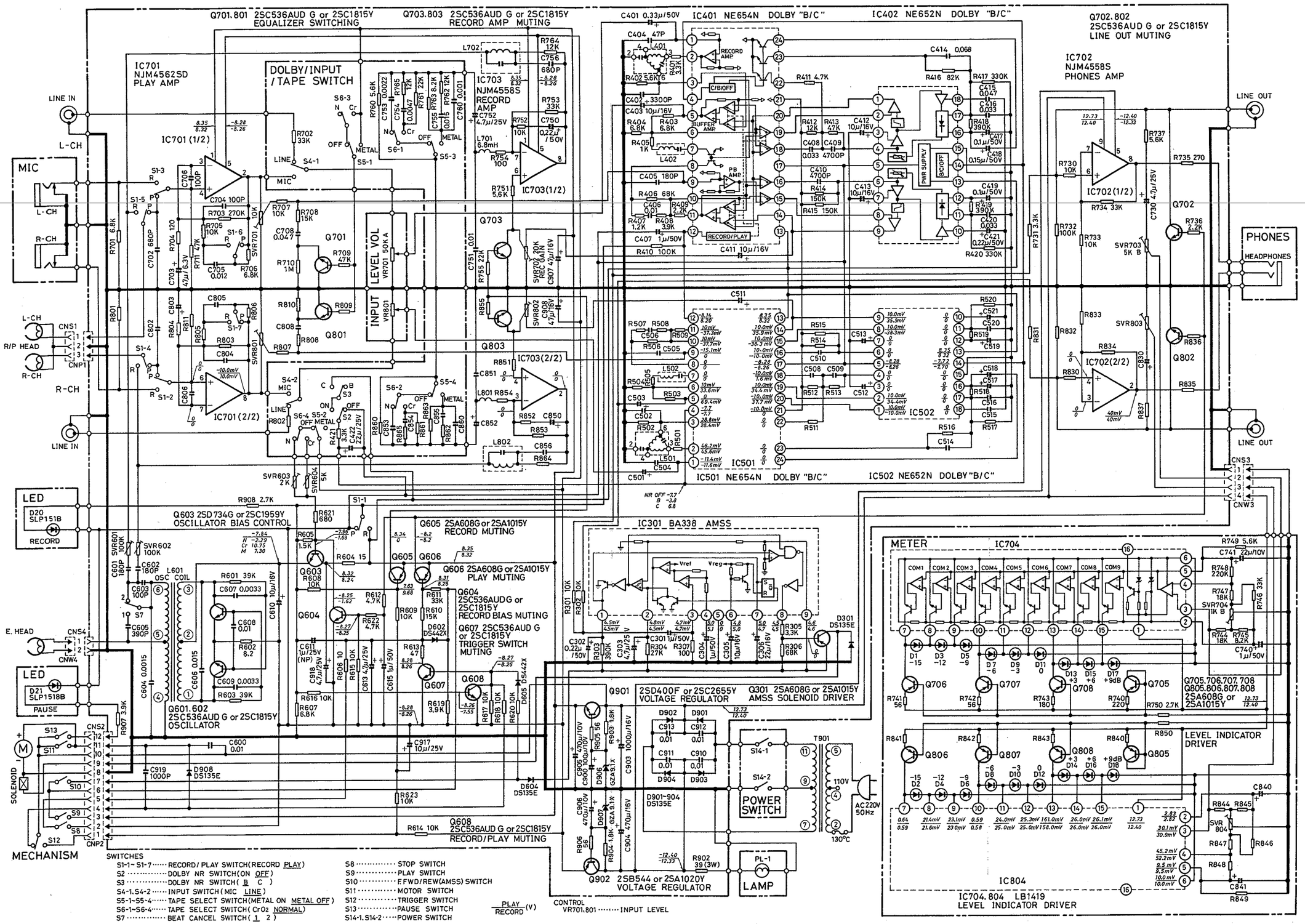
MECHANISM EXPLODED VIEW (1) (2)

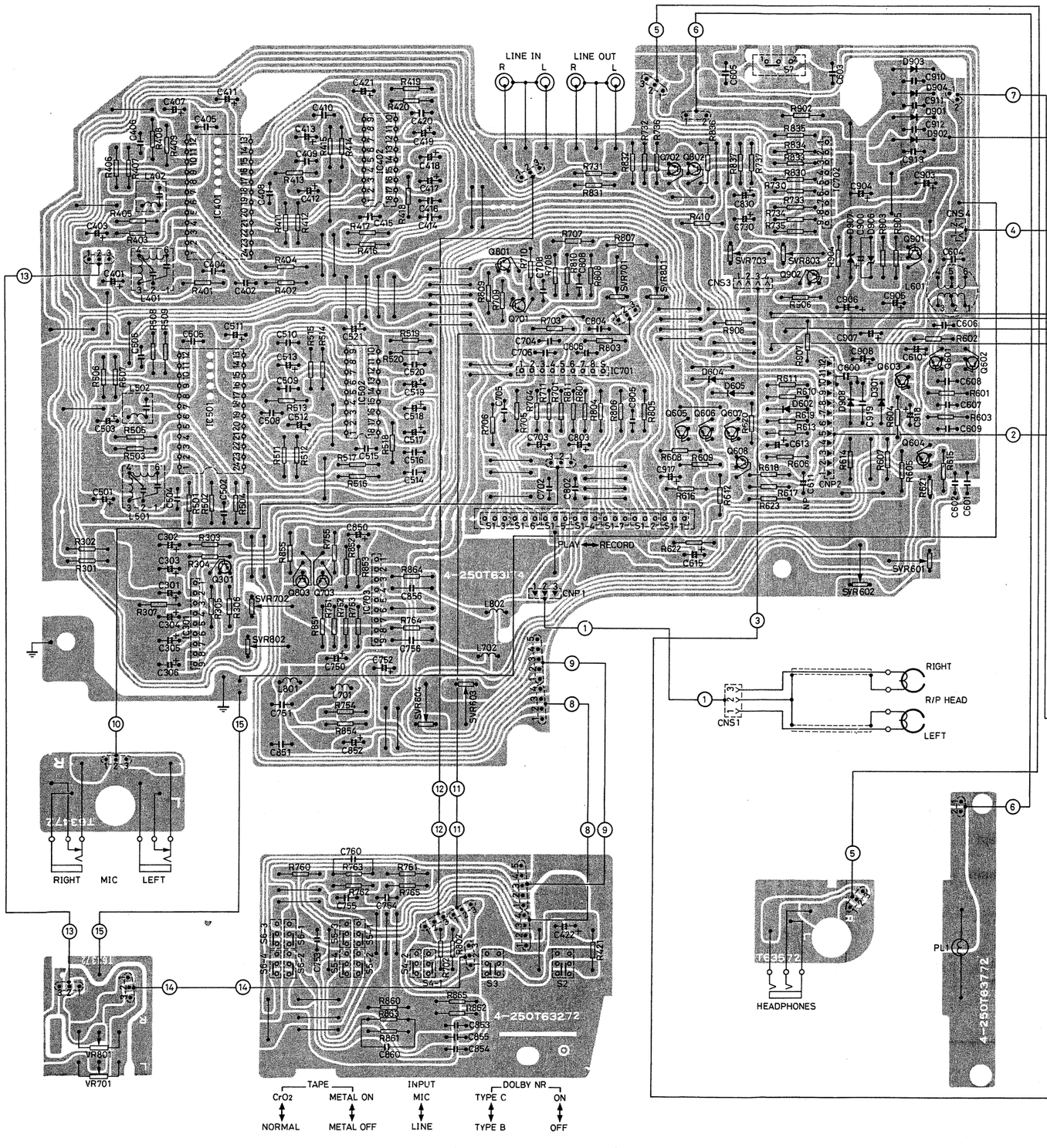


Key No.	Part No.	Description	Q'ty
MECHANISM (TM-300US)			
Y08		Pan Hd. Forming Screw, 3x4mm	3
Y09		Washer, 2.6x5x0.5mm, (Black)	1
Y10		Pan Screw Washer Hd., 2x6mm	1
Y11		Pan Screw with Spring Washer, 2x4mm	1
Y12		Pan Screw with Spring Washer, 2x6mm	3
Y13		Pan Screw with Spring Washer, 2.6x4mm	1
Y14		Flat Hd. Screw, 2.6x3.5mm	3
Y15		Binding Hd. Screw, 3x4mm	1
Y16		Pan Hd. Screw, 2.6x7mm	1
Y17		Washer, 2x4.3x0.4mm	1
Y18		Washer, 2.6x10x0.5mm	1
Y19		Pan Hd. Screw, 2.6x8mm	1
Y20		Washer, 2x6x0.4mm	1
Y21		Pan Screw Washer Hd., 2x4mm	1
Y22		Pan Screw Washer Hd., 2x8mm	1



SCHEMATIC DIAGRAM


Q701.801 2SC536AUD G or 2SC1815Y EQUALIZER SWITCHING
Q703.803 2SC536AUD G or 2SC1815Y RECORD AMP MUTING
IC701 NJM4562SD PLAY AMP
IC703 NJM4558S RECORD AMP
IC401 NE654N DOLBY "B/C"
IC402 NE652N DOLBY "B/C"
Q702.802 2SC536AUD G or 2SC1815Y LINE OUT MUTING
IC702 NJM4558S PHONES AMP
DOLBY/INPUT /TAPE SWITCH
LEVEL VOL
INPUT
LINE IN
L-CH
R-CH
MIC
R/P HEAD
E. HEAD
LINE OUT
PHONES
HEADPHONES
Q603 2SD734G or 2SC1959Y OSCILLATOR BIAS CONTROL
Q601.602 2SC536AUD G or 2SC1815Y OSCILLATOR
Q604 2SC536AUDG or 2SC1815Y RECORD BIAS MUTING
Q605 2SA608G or 2SA1015Y RECORD MUTING
Q606 2SA608G or 2SA1015Y PLAY MUTING
Q607 2SC536AUD G or 2SC1815Y TRIGGER SWITCH MUTING
Q608 2SC536AUD G or 2SC1815Y RECORD/PLAY MUTING
IC301 BA338 AMSS
Q901 2SD400F or 2SC2655Y VOLTAGE REGULATOR
Q301 2SA608G or 2SA1015Y AMSS SOLENOID DRIVER
Q902 2SB544 or 2SA1020Y VOLTAGE REGULATOR
POWER SWITCH
LAMP
IC704 METER
IC804 LB1419 LEVEL INDICATOR DRIVER
LED
RECORD
PAUSE
MECHANISM
SOLENOID
SWITCHES
S1-1~S1-7 ····· RECORD/PLAY SWITCH(RECORD PLAY)
S2 ····· DOLBY NR SWITCH(ON OFF)
S3 ····· DOLBY NR SWITCH(B C)
S4-1.S4-2 ····· INPUT SWITCH(MIC LINE)
S5-1~S5-4 ····· TAPE SELECT SWITCH(METAL ON METAL OFF)
S6-1~S6-4 ····· TAPE SELECT SWITCH(CrO2 NORMAL)
S7 ····· BEAT CANCEL SWITCH(1 2)
S8 ····· STOP SWITCH
S9 ····· PLAY SWITCH
S10 ····· F.FWD/REW(AMSS) SWITCH
S11 ····· MOTOR SWITCH
S12 ····· TRIGGER SWITCH
S13 ····· PAUSE SWITCH
S14-1.S14-2 ····· POWER SWITCH
PLAY / RECORD (V)
CONTROL VR701.801 ····· INPUT LEVEL



SWITCHES

S1 .....RECORD/PLAY SWITCH
S2 .....DOLBY NR SWITCH
S3 .....DOLBY NR SWITCH
S4 .....INPUT SWITCH
S5 .....TAPE SELECT SWITCH
S6 .....TAPE SELECT SWITCH
S7 .....BEAT CANCEL SWITCH
S8 .....STOP SWITCH
S9 .....PLAY SWITCH
S10 .....F.FWD/REW (AMSS) SWITCH
S11 .....MOTOR SWITCH
S12 .....TRIGGER SWITCH
S13 .....PAUSE SWITCH
S14 .....POWER SWITCH

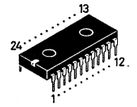
CONTRCL

VR701、801.....INPUT LEVEL

IC301.....BA338

IC402、502.....NE652N

IC401、501.....NE654N



IC701.....NJM4562SD
IC702、703.....NJM4558S

IC704、804.....LB1419

Q301、605、606、
705、706、707、
805、806
708、808.....2SA608
Q601、602、604、
607、608、701、
702、703、801、
802、803 .....2SC536
Q603 .....2SD734

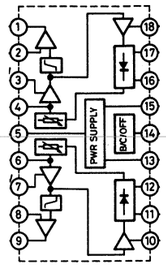
Q901.....2SD400
Q902.....2SB544

– 12 –

– 13 –

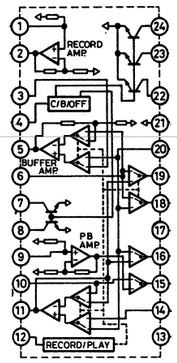
PIN DESCRIPTION

IC402, 502 NE652N



1. High level stage output
2. High level stage input
3. AC ground high level stage
4. High level stage side chain
5. Vcc
6. Low level stage side chain
7. AC ground low level stage
8. Low level stage in
9. Record output
10. Low level stage high pass filter
11. Low level stage integrating filter
12. Low level stage control voltage
13. Vcc
14. Mode B/C/NR off switch input
15. Ground
16. High level stage control voltage
17. High level stage integrating filter
18. High level stage high pass filter

IC401, 501 NE654N



Dolby B-C Noise Reduction System.
Switches shown record position.

1. Record input
2. MPX-filter input
3. MPX-filter output
4. Mode B/C/NR OFF switch input
5. Line output
6. Spectral skewing network
7. Spectral skewing network switch
8. Anti-saturation filter switch
9. Playback input
10. Anti-saturation filter
11. Anti-saturation filter input
12. Record/playback switch input
13. Vcc
14. Record output
15. Low level stage main chain input
16. Low level stage side chain input
17. Vcc
18. Hihg level stage side chain input
19. High level stage main chain input
20. High level stage output
21. Ground
22. Side chain filter switch
23. Integrating filter switch
24. Integrating filter switch

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